

In Exercises 27–30, match the function with its graph.

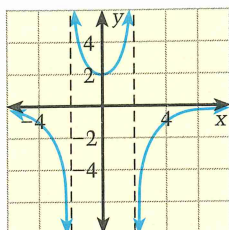
27. $f(x) = \frac{x+3}{x-2}$

28. $f(x) = \frac{-8}{x^2-4}$

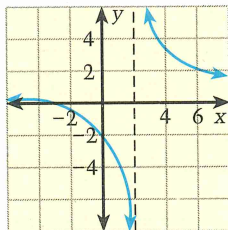
29. $f(x) = \frac{3}{x+2}$

30. $f(x) = \frac{x-3}{2x+4}$

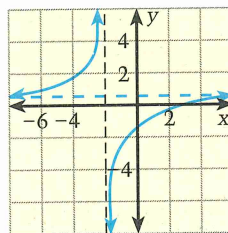
a.



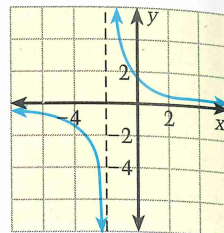
b.



c.



d.



In Exercises 31–42, sketch the graph of the function.

31. $f(x) = \frac{2x-6}{x+4}$

32. $f(x) = \frac{-5}{x+9}$

33. $f(x) = \frac{3}{4x+10}$

34. $f(x) = \frac{5x+1}{x^2-1}$

35. $f(x) = \frac{3x^2+4x+4}{x^2-5x-6}$

36. $f(x) = \frac{-3x^2}{2x+6}$

37. $f(x) = \frac{3x^3+1}{4x^3-32}$

38. $f(x) = \frac{5-x}{4x^2-3x-1}$

39. $f(x) = \frac{x^2-6x-9}{x^3+27}$

40. $f(x) = \frac{-2x^2}{x^2-9}$

41. $f(x) = \frac{x^2-10x+24}{3x}$

42. $f(x) = \frac{x^3+5x^2-1}{x^2-4x}$

Renting Videos In Exercises 43 and 44, use the following information.

You have purchased a VCR for \$180. You also joined a video rental store where you can rent movies for \$3 each.

43. Write a model that represents your average cost per movie (including the price of the VCR). Sketch the graph of this model. What is the horizontal asymptote and what does it represent?

44. Suppose that the cost of admission to a movie theater is \$6.00. How many videos must you rent to make your average cost per video less than \$6.00?

45. **Hospital Costs** For 1970 to 1990, the average daily cost, C (in dollars), per patient at a community hospital can be modeled by

$$C = \frac{746,676 + 16,557t}{10,000 - 864t + 22.8t^2}$$

where $t = 0$ represents 1970. Sketch the graph of this model. Would you expect this model to continue to represent patient costs through the year 2010? Explain.



In 1990, Americans rented about 6 million movie videos each day, about twice the number of tickets sold at movie theaters.